

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 14 NOV 1928

Date of writing Report 19 When handed in at Local Office 12.11.1928 Port of GLASGOW
No. in Survey held at GLASGOW Date, First Survey 31.8.28 Last Survey 5.11.1928
Reg. Book. (Number of Visits 6)
65385 on the S.S. BEHAR Tons { Gross 6000
Net
Built at GREENOCK By whom built HARLAND & WOLFF LTD Yard No. 830 When built 1928.
Owners THE HAIN S.S. CO. LTD Port belonging to LONDON
Electric Light Installation fitted by MESSRS. HARLAND & WOLFF LTD. Contract No. 830 When fitted 1928

System of Distribution Two Wire
Pressure of supply for Lighting 110 volts, Heating 110 volts, Power 110 volts.
Direct or Alternating Current, Lighting Direct. Power Direct.
If alternating current system, state frequency of periods per second —
Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off Yes
Generators, do they comply with the requirements regarding rating Yes, are they compound wound Yes
are they over compounded 5 per cent. Yes, if not compound wound state distance between each generator —
Where more than one generator is fitted are they arranged to run in parallel —, is an adjustable regulating resistance fitted in series with each shunt field Yes
Are all terminals accessible, clearly marked, and furnished with sockets Yes, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched Yes Are the lubricating arrangements of the generators as per Rule Yes
Position of Generators Starboard side of Engine Room fore. Floor level
is the ventilation in way of the generators satisfactory Yes, are they clear of all inflammable material Yes
if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators — and —, are the generators protected from mechanical injury and damage from water, steam or oil Yes
are their axes of rotation fore and aft Yes
Earthing, are the bedplates and frames of the generating plant efficiently earthed Yes are the prime movers and their respective generators in metallic contact Yes
Main Switch Boards, where placed Starboard Side of Engine Room on floor level
If the generators and main switchboard are not placed in the same compartment, is each generator provided with a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard —
Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes Yes
are they protected from mechanical injury and damage from water, steam or oil Yes, if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards — and —
are they constructed wholly of durable, non-ignitable non-absorbent materials Yes, is all insulation of high dielectric strength and of permanently high insulation resistance Yes, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework Yes
and is the frame effectively earthed Yes Are the fittings as per Rule regarding:— spacing or shielding of live parts Yes, accessibility of all parts Yes, absence of fuses on back of board Yes, proportion of omnibus bars Yes, individual fuses to voltmeter, pilot or earth lamp Yes, connections of switches Yes
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches D.P. Switch & Fuses for Generator mains D.P. Switch & Fuses for each outgoing circuit
Instruments on main switchboard 1 ammeters 1 voltmeters — synchronising device for paralleling purposes.
Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system 2 lamps in series across bus-bars
Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules Yes
Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule Yes,



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Lloyd's Register
W1267-0159.12
Foundation

Cables: Single, twin, concentric, or multicore *Single* are the cables insulated and protected as per Tables IV or V of the Rules *yes*.
Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *5' volt*.
Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets *yes*.

Paper Insulated Cables. If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound *yes*.

Cable Runs, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage *yes*.

Support and Protection of Cables, state how the cables are supported and protected *Cables run in Wood casing in Accommodation in Gal. Steel tubing along decks Cables in C.R. clepped direct to Bulkheads.*
If cables are run in wood casings, are the casings and caps secured by screws *yes*, are the cap screws of brass *yes*, are the cables run in separate grooves *yes*. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII *yes*.

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements *yes*.

Joints in Cables, state if any, and how made, insulated, and protected *In special joint box*.

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands *yes*.

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed *yes* state the material of which the bushes are made *Lead*.

Earthing Connections, state what earthing connections are fitted and their respective sectional areas *yes*.

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule *yes*, are their connections made as per Rule *yes*.

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven *yes*.

Navigation Lamps, are these separately wired *yes*, controlled by separate switch and separate fuses *yes*, are the fuses double pole *yes*.

are the switches and fuses grouped in a position accessible only to the officers on watch *yes*.

has each navigation lamp an automatic indicator as per Rule *yes*.

Secondary Batteries, are they constructed and fitted as per Rule *yes*.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight *yes*.

are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected *yes*.

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *yes*.

how are the cables led *yes*.

where are the controlling switches situated *yes*.

Searchlight Lamps, No. of *1*, whether fixed or portable *Portable*, are their fittings as per Rule *yes*.

Are Lamps, other than searchlight lamps, No. of *—*, are their live parts insulated from the frame or case *yes*, are their fittings as per Rule *yes*.

Motors, are their working parts readily accessible *yes*, are the coils self-contained and readily removable for replacement *yes*.

are the brushes, brush holders, terminals and lubricating arrangements as per Rule *yes*, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material *yes*.

are they protected from mechanical injury and damage from water, steam or oil *yes* are their axes of rotation fore and aft *no* port & starboard.

if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type *enclosed*.

if not of this type, state distance of the combustible material horizontally or vertically above the motors *and*.

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule *yes*.

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule *yes*.

Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings *yes*.

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office *yes*.

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	12	110	109	575	Steam Engine	—	—
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER								

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	2	1	19	0.03	109	30	Rubber	Lead Covered
	EQUALISER CONNECTIONS								
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM								
	ACCOMMODATION								
	WIRELESS	2	0.01	4	0.04	5	408	Rubber	Lead Covered Removed
	SEARCHLIGHT	2	0.34	19	0.04	50	628		Braided cable in
	MASTHEAD LIGHT...	2	0.002	3	0.029	5.45	290		Engine Room & exposed
	SIDE LIGHTS...	2	0.002	3	0.029	5.45	80		positions
	COMPASS LIGHTS...	2	0.002	3	0.029	2.2	28		U.R. Association
	POOP LIGHTS	2	0.002	3	0.029	5.45	400		cable taped & Braided
	CARGO LIGHTS	2	0.002	3	0.029	3.3	220		in accommodation &
	ARC LAMPS								elsewhere.
	HEATERS	2	0.002	3	0.029	4.545			

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP								
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP								
	ENGINE TURNING GEAR								
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS								
	OIL FUEL TRANSFER PUMP								
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR								
	(a) MOTOR GENERATOR								
	(b) MAIN MOTOR								
	WORKSHOP MOTOR								
	VENTILATING FANS	1	0.002	3	0.029	2	90		

All Conductors are of annealed copper conforming to British Standard Specification No. 7.

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

For HARLAND AND WOLFF, LIMITED.

E. J. Green
Govan Secretary.

Electrical Engineers.

Date *9th November 1928*

COMPASSES.

Distance between electric generators or motors and standard compass *120 feet.*

Distance between electric generators or motors and steering compass *114 feet.*

The nearest cables to the compasses are as follows:—

A cable carrying *2* Ampères *nil* feet from standard compass *nil* feet from steering compass. *Compass light.*

A cable carrying *5* Ampères *10* feet from standard compass *5* feet from steering compass. *Supply to Nav. Dist Box*

A cable carrying _____ Ampères _____ feet from standard compass _____ feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power. *yes*

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted _____

The maximum deviation due to electric currents was found to be *nil* degrees on *all the* course in the case of the standard compass, and *nil* degrees on *all the* course in the case of the steering compass.

For HARLAND AND WOLFF, LIMITED.

E. J. Green
Govan Secretary.

Builder's Signature.

Date *9th November 1928*

Is this installation a duplicate of a previous case *No.* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c.)

This installation has been fitted on board under special survey. Tested under full load conditions and found satisfactory. The materials and workmanship were found to be good and sound.

It is submitted that this vessel is eligible for THE RECORD. Elec. Light

D. H. 16/11/28

Total Capacity of Generators *12* Kilowatts.

The amount of Fee ... £ *12.0.0*

When applied for,

@ *Guk* 19

Travelling Expenses (if any) £

When received,

17.11.28

Committee's Minute *GLASGOW 13 NOV 1928*

Assigned *Elec Light*

J. S. Rankin
Surveyor to Lloyd's Register of Shipping.